

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Claim 1 (currently amended): A storage device detector system for use with a gripper assembly in a storage library system, comprising:

a light source for directing light to an expected position of a storage device;

a sensor for detecting light; and

at least one controller, wherein the at least one controller and the sensor are configured to detect light reflected from the expected position of the storage device and determine the presence of the storage device based on frequency components of at least a portion of a signal associated with a linear scan by the sensor exceeding a threshold, wherein the frequency components vary with a distance of the sensor from a reflecting surface.

Claim 2 (original): The system of claim 1, wherein the sensor includes a linear scanner.

Claim 3 (original): The system of claim 1, wherein the sensor includes an area sensor.

Claim 4 (original): The system of claim 1, wherein the at least one controller and sensor are further configured to detect a barcode label associated with a storage device based on the detected light.

Claim 5 (cancelled)

Claim 6 (currently amended): The system of claim 1, wherein if no portion of the frequency components exceed the threshold ~~are below a predetermined value~~, determining that a storage device is not present.

Claim 7 (original): The system of claim 1, wherein the sensor has a depth of focus located approximately at the expected position of a face of the storage device.

Claim 8 (original): The system of claim 7, wherein the depth of focus is within plus or minus 1.0 inch from the expected position of a face of the storage device.

Claim 9 (original): The system of claim 1, wherein the light source includes a plurality of light emitting diodes.

Claim 10 (original): The system of claim 1, wherein the storage device includes a magnetic tape cartridge.

Claim 11 (currently amended): A storage library system having a storage device detector system, comprising:

a light source for directing light to the expected position of a storage device;

a linear scanner; and

at least one controller, wherein the at least one controller and linear scanner are configured to

detect light reflected from the expected position of the storage device and determine the presence of a storage device based on at least a portion of frequency components of an output from the linear scanner exceeding a threshold, wherein the frequency components vary with a distance of the sensor from a reflecting surface, and

determine the presence of a label associated with the storage device.

Claim 12 (cancelled)

Claim 13 (currently amended): The system of claim 11, wherein if no portion of the frequency components exceed the threshold ~~are below a predetermined value~~, determining that a storage device is not present.

Claim 14 (original): The system of claim 11, wherein the linear scanner includes a linear CCD scanner.

Claim 15 (original): The system of claim 11, wherein the linear scanner has a depth of focus located approximately at the expected position of the opposing face of the storage device.

Claim 16 (original): The system of claim 15, wherein the depth of focus is within plus or minus 1.0 inch from the expected position of the opposing face of the storage device.

Claim 17 (original): The system of claim 11, wherein the light source includes a plurality of light emitting diodes.

Claim 18 (original): The system of claim 11, wherein the storage devices include magnetic tape cartridges.

Claim 19 (currently amended): A method for determining the presence of a storage device in an automated storage library system, comprising:

directing light to a storage slot for holding a storage device;

detecting light reflected from the storage slot with a sensor; and

determining if a storage device is within the storage slot based on at least a portion of frequency components from an output signal of the sensor associated with a linear scan by the sensor exceeding a threshold, wherein the frequency components vary with a distance of the sensor from a reflecting surface.

Claim 20 (original): The method of claim 19, wherein the sensor includes a linear scanner.

Claim 21 (original): The method of claim 19, wherein the sensor includes an area scanner.

Claim 22 (original): The method of claim 19, further including reading a barcode label associated with the storage device with the sensor.

Claim 23 (cancelled)

Claim 24 (currently amended): The method of claim 19, further including determining that a storage device is not present if no portion of the frequency components exceed the threshold ~~are less than a predetermined value.~~

Claim 25 (original): The method of claim 19, wherein the sensor has a depth of focus at a location approximately where an opposing surface of the storage medium is expected to be located.

Claim 26 (original): The method of claim 19, wherein the depth of focus is within plus or minus 1.0 inch from the expected position of the opposing face of the storage device.

Claim 27 (currently amended): A method for determining the presence of a storage device in an automated storage library system, comprising:

directing light to a storage slot for holding a storage device;

detecting light reflected from the storage slot with a sensor;

determining if a storage device is located within the storage slot based on at least a portion of frequency components of analog data associated with a linear scan by the sensor exceeding a threshold, wherein the frequency components vary with a distance of the sensor from a reflecting surface; and

reading a barcode label associated with the storage device based on the light detected by the sensor.

Claims 28-29 (cancelled)

Claim 30 (currently amended): The method of claim 27, further including determining that a storage device is not present if no portion of the frequency components of the detected image exceed the threshold ~~are less than a predetermined value.~~

Claim 31 (original): The method of claim 27, detecting the light with a camera having a depth of focus approximately at the expected position of the opposing surface of the storage device.

Claim 32 (original): The method of claim 31, wherein the depth of focus is within plus or minus 1.0 inch from the expected position of the opposing face of the storage device.

Claim 33 (original): The method of claim 27, wherein the sensor includes a linear scanner.

Claim 34 (original): The method of claim 27, wherein the sensor includes an area scanner.